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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,932	07/20/2001	Blaise deB. Frederick	04843-036001	2406
26161	7590	05/05/2004	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			SHRIVASTAV, BRIJ B	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/909,932

Applicant(s)

FREDERICK ET AL.

Examiner

Brij B Shrivastav

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

1. Applicant's reply dated February 20, 2004 in response to the Office action dated September 5, 2003 has been received and entered.

### **DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-28 and 33-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Briggs (US 4,707,797).

As regard to claim 1, Briggs teaches an apparatus for transmitting a waveform reflecting a time-varying magnetic resonance radio frequency signal, including a wave form generator, which uses data reflecting the time-varying magnetic resonance radio frequency signal to generate a wave form having a time varying property, simulating a waveform of a subject undergoing a magnetic resonance scan (figures 1-3 and 8, numerals 12 and 16; columns 7-9). Further, Briggs teaches a signal transmitter to transmit the waveform having the time-varying property to a magnetic resonance scanner (figure 1, numeral 20; columns 5 and 6, lines 65-68 and 1-2).

As regards to claims 2-5, Briggs also teaches a computer as a control device as a part of a waveform generator generating a waveform having variable amplitude, frequency and phase, and with a base-band or intermediate frequency generator and

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modulator, or a digital frequency synthesizer (figure 1, numeral 26; column 6, lines 13-39).

As regards to claims 6 and 7, Briggs further teaches: a) a transmitter as an antenna or a cable (figure 1, numeral 20), b) a magnetic resonance scanner and a waveform generator (figures 1 and 2, numerals 12 and 14).

As regards to claims 8-10 Briggs further teaches a keyboard, a monitoring device for recording operating parameters of a magnetic resonance scanner or free induction decay signals, wherein the operating device is a digital or analog signal recorder (figure 1).

3. As regards to claim 11, Briggs teaches an apparatus for transmitting waveform reflecting a magnetic resonance radio frequency signal, including a storage medium to store data reflecting magnetic resonance radio frequency signal (figure 1, numeral 42); a wave form generator using data reflecting magnetic resonance radio frequency signal to generate a waveform to simulate a subject undergoing a magnetic resonance scan (figures 1-3, 7 and 8, numeral 12; column 6, lines 3-12). Further, Briggs teaches a signal transmitter to transmit the waveform to a magnetic resonance scanner and a data storage medium (figure 1, numeral 20).

As regards to claims 12-15, Briggs also teaches a random access memory, and a computer as a control device as a part of a waveform generator, and a waveform generator with a base-band or intermediate frequency generator and modulator, or a digital frequency synthesizer (figures 1 and 2, numeral 12, 26).

As regards to claims 16 and 17, Briggs further teaches: a) a transmitter as an antenna or a cable (figure 1, numeral 20), b) a magnetic resonance scanner and a waveform generator (figures 1-2).

As regards to claims 18 and 19 Briggs further teaches a monitoring device for recording operating parameters of a magnetic resonance scanner or free induction decay signals, wherein the operating device is a digital or analog signal recorder (figure 1).

4. As regards to claim 20, Briggs teaches an apparatus and method for transmitting a waveform reflecting a magnetic resonance imaging signal, including a wave form generator, which uses data reflecting the time-varying magnetic resonance radio frequency signal to generate a wave form having time varying property, wherein the waveform simulates a waveform of a subject undergoing a magnetic resonance scan (figures 1, 2, 7, 8, numerals 12 and 14; columns 6-9). Briggs also teaches a signal transmitter to transmit the waveform having the time-varying property to a magnetic resonance scanner (figure 1, numeral 20), and a magnetic resonance scanner which receives the waveform and uses it to produce an image (figure 1, numeral 14).

As regards to claims 21-23, Briggs also teaches a computer as a control device as a part of a waveform generator, and a waveform generator with a base-band or intermediate frequency generator and modulator, or a digital frequency synthesizer (figures 1 and 2).

As regards to claims 24, Briggs further teaches: a) a transmitter as an antenna (figure 1, numeral 20).

5. As regards to claim 25, Briggs teaches a method of transmitting a waveform reflecting a time-varying magnetic resonance radio frequency signal, providing data reflecting the time-varying magnetic resonance radio-frequency signal to a waveform generator, and generating a waveform having a time-varying property based on the data reflecting the time-varying magnetic resonance radio frequency signal using the waveform generator, wherein the waveform simulates a waveform of a subject undergoing a magnetic resonance scan (figures 1 and 2, numeral 12; columns 6-8). Briggs also teaches a signal transmitter transmitting the waveform having the time-varying property to a magnetic resonance scanner (figure 1, numeral 20).

As regards to claims 26 and 27, Briggs further teaches amplitude, frequency, or phase as time-varying property of the waveform generator (figures 7-8) and the stored data reflect the time-varying MR RF signal (figure 1, numeral 42).

As regards to claims 28, 33-36, Briggs teaches detecting the waveform having the time-varying property and using a real subject for imaging (figures 1 and 2; numerals 16 and 26).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Briggs (US 4,707,797) as applied to claim 25 above, and further in view of Schramm (US 4,014,109).

6. As regards to claim 29-32, Briggs fails to teach: a) testing and calibrating a magnetic resonance system, and data processing system; and b) training operators of a magnetic resonance system. Schramm teaches testing and calibrating a magnetic resonance system, and training operators of a magnetic resonance system (see abstract). It would have been obvious for one having ordinary skill in the art at the time the invention was made to combine teachings of Schramm for testing, calibrating and training the operators with the teachings of Briggs to improve machine quality and have trained operators to run the machine to improve image quality and service to patients.

7. Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Briggs (US 4,707,797) as applied to claims 1, 11, 20 and 25 above, and further in view of Gevines et al (4,736,751).

As regards to claims 37-40, Briggs does not specifically teach a subject being constructed by computer programming. Gevines et al teach a subject being constructed by a computer ((see abstract). It would have been obvious to one of ordinary skill in the art to adapt teaching of Gevines et al with the teaching of Briggs to construct a subject by computer programming to simulate functional aspects of various organs of a real being for training purposes to improve imaging skill of health professionals,

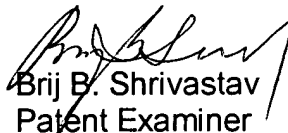
***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brij B Shrivastav whose telephone number is 571-272-2250. The examiner can normally be reached on 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bbs  
April 19, 2003

  
Brij B. Shrivastav  
Patent Examiner